

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 3718	<b>FOR FURTHER ACTION</b> see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/IB2005/000731	International filing date (day/month/year) 21/03/2005	(Earliest) Priority Date (day/month/year) 26/03/2004
Applicant  SUPERSPRINT S.R.L.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 4 sheets.



It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.



The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (See Box II).

3. ☐ **Unity of invention is lacking** (see Box III).

4. With regard to the **title**,



the text is approved as submitted by the applicant.



the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,



the text is approved as submitted by the applicant.



the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

- a. the figure of the **drawings** to be published with the abstract is Figure No. 1



as suggested by the applicant.



as selected by this Authority, because the applicant failed to suggest a figure.



as selected by this Authority, because this figure better characterizes the invention.

- b. ☐ none of the figures is to be published with the abstract.

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/IB2005/000731

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 F01N1/08 F01N1/12

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 F01N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FR 1 258 458 A (J. EBERSPACHER) 14 April 1961 (1961-04-14)	1
A	page 2, column 2 figure 2	5
A	DE 199 48 146 A1 (WOCO FRANZ-JOSEF WOLF & CO) 29 March 2001 (2001-03-29) column 3, line 5 - column 4, line 12 figures 1,2	1,5-7
A	US 3 511 617 A (RAYMOND G. LYBEN) 12 May 1970 (1970-05-12) column 4, line 17 - column 5, line 20 figures 5-7	1,5-7
A	US 2 070 543 A (CARY BEECHER B ET AL) 9 February 1937 (1937-02-09) figures 1,5,6	1,5-7
	-/-	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

\* Special categories of cited documents:

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \*Z\* document member of the same patent family

Date of the actual completion of the international search

1 June 2005

Date of mailing of the international search report

08/06/2005

Name and mailing address of the ISA

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Authorized officer

Ikas, G

## INTERNATIONAL SEARCH REPORT

International Application No  
PCT/IB2005/000731

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 935 057 A (ARVIN EXHAUST B.V) 11 August 1999 (1999-08-11) paragraph '0019! figures 1a,2a -----	1,2
A	DE 37 16 248 A1 (GILARDINI S.P.A) 26 November 1987 (1987-11-26) column 2, line 24 - line 62 figure 2 -----	1
A	US 5 581 056 A (BELLGARDT ET AL) 3 December 1996 (1996-12-03) column 4, line 43 - column 5, line 26 figure 1 -----	1

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No  
PCT/IB2005/000731

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
FR 1258458	A	14-04-1961	NONE	
DE 19948146	A1	29-03-2001	WO 0123714 A1	05-04-2001
US 3511617	A	12-05-1970	NONE	
US 2070543	A	09-02-1937	NONE	
EP 0935057	A	11-08-1999	NL 1008252 C2	10-08-1999
			DE 69902108 D1	22-08-2002
			DE 69902108 T2	21-11-2002
			EP 0935057 A1	11-08-1999
			ES 2178866 T3	01-01-2003
			JP 11280471 A	12-10-1999
			US 6105717 A	22-08-2000
DE 3716248	A1	26-11-1987	FR 2599082 A1	27-11-1987
US 5581056	A	03-12-1996	DE 9400796 U1	07-04-1994
			DE 59500065 D1	30-01-1997
			EP 0664380 A1	26-07-1995

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

## PCT

To:

see form PCT/ISA/220

### WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing  
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference  
see form PCT/ISA/220

**FOR FURTHER ACTION**  
See paragraph 2 below

International application No.  
PCT/B2005/000731

International filing date (day/month/year)  
21.03.2005

Priority date (day/month/year)  
26.03.2004

International Patent Classification (IPC) or both national classification and IPC  
F01N1/08, F01N1/12

Applicant  
SUPERSPRINT S.R.L.

**1. This opinion contains indications relating to the following items:**

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☒ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

**2. FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

**3. For further details, see notes to Form PCT/ISA/220.**

Name and mailing address of the ISA:



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**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/IB2005/000731

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**Box No. I Basis of the opinion**

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1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
  - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material:
    - ☐ a sequence listing
    - ☐ table(s) related to the sequence listing
  - b. format of material:
    - ☐ in written format
    - ☐ in computer readable form
  - c. time of filing/furnishing:
    - ☐ contained in the international application as filed.
    - ☐ filed together with the international application in computer readable form.
    - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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**Box No. II Priority**

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1. ☒ The validity of the priority claim has not been considered because the International Searching Authority does not have in its possession a copy of the earlier application whose priority has been claimed or, where required, a translation of that earlier application. This opinion has nevertheless been established on the assumption that the relevant date (Rules 43*bis*.1 and 64.1) is the claimed priority date.
2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.
3. Additional observations, if necessary:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/IB2005/000731

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**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	2-7
	No: Claims	1
Inventive step (IS)	Yes: Claims	2-7
	No: Claims	1
Industrial applicability (IA)	Yes: Claims	1-7
	No: Claims	

2. Citations and explanations

**see separate sheet**

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**Box No. VII Certain defects in the international application**

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The following defects in the form or contents of the international application have been noted:

**see separate sheet**

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**Box No. VIII Certain observations on the international application**

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The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

**see separate sheet**

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING  
AUTHORITY (SEPARATE SHEET)**

International application No.

PCT/IB2005/000731

**Re Item V.**

1. Reference is made to the following document:

D1 : FR 1 258 458 A

**2. Novelty and Inventive Step**

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 is not new in the sense of Article 33(2) PCT.

**2.1. Novelty of Independent Claim 1**

Document D1 discloses (the references in parentheses applying to this document):

A muffler (see figure 2) for exhaust systems for vehicles, comprising a tubular shell that is internally lined with noise-deadening material and is closed at its ends by a front wall provided with an inlet connectable to receive exhaust gas and a rear wall, a first chamber (1a) and a second chamber (1b) being defined within the tubular shell, which are separated by a transverse wall having an inlet opening and an outlet opening, a perforated (3) inlet pipe (2) extending within the first chamber (1a) from the inlet to the inlet opening, gas-piping means extending within the first chamber (1a) and having one end open to said outlet opening, and the other end connectable to exhaust pipes, wherein said inlet opening and outlet opening are substantially equal in diameter to the pipe (2) and are connected to each other via a toroidal duct that is arranged within the second chamber (1b) and is substantially equal in diameter to the inlet pipe (2).

In other words, the perforated inlet pipe, the toroidal duct and the gas-piping means are sections of the u-shaped pipe (2) having all along its length a substantially constant diameter.



Thus, the subject-matter of claim 1 is not new in the sense of Article 33(2) PCT.

## **2.2. Novelty and Inventive Step of Dependent Claims 2 to 7**

The combination of the features of dependent claims 2 to 7 are neither known from, nor rendered obvious by, the available prior art.

- 2.3. The subject-matter of claims 1 to 7 is considered to have an industrial application (Article 33(4) PCT).

### **Re Item VII.**

3. Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the document D1 is not mentioned in the description, nor is this document identified therein.

### **Re Item VIII.**

4. According to Merrian-Webster's Collegiate Dictionary, the term "toroidal" is defined as follows: "relating to, or shaped like a torus or toroid: doughnut-shaped".

Therefore, the term "toroidal duct" renders the wording of independent claim 1 somewhat unclear, since the muffler being the subject of the present application does not show any doughnut-shaped part. What seems to be meant is that the duct connecting the inlet pipe and the gas piping means is "U-shaped".

5. The vague and imprecise statement "changes within the scope of the inventive concept" in the description on page 3, last paragraph, implies that the subject-matter for which protection is sought may be different to that defined by the claims, thereby resulting in lack of clarity (Article 6 PCT) when used to interpret them.